Asteroid Astrometry from CCD Images

December 5, 2014

Jung Lin (Doris) Lee dorislee@berkeley.edu Group partners: Jennifer Ito, Manuel Silvia Prof. James Graham, UGSI Heechan Yuk, Isaac Domagalski

Abstract

In this experiment, we—

1. Introduction

2. Wavelength Calibration

We dark subtract the image

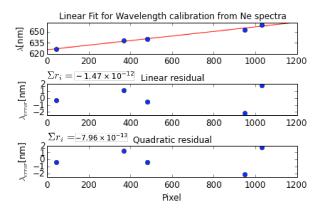


Figure 1: The first order fit in the top figure shows that the dispersion is approximately linear ($\frac{d\lambda}{d\text{pixel}}$ =0.03145nm/pix). Since there is no notable pattern in linear residual, and the magnitude of the residual is small. From the bottommost quadratic figure, we see that the residual decrease by an order of magnitude.

- Chromey, Frederick R. To Measure the Sky: An Introduction to Observational Astronomy. Cambridge: Cambridge UP, 2010. Print.
- Stewart, James. *Calculus: Early Transcendentals*. 7th ed. Belmont: Thomson/Brooks/Cole, 2003. Print.
- Perryman, M.A.C. and Lindegren, L. and Kovalevsky, J. and Hoeg, E. and Bastian, U. and Bernacca, P. L. and Crézé, M. and Donati, F. and Grenon, M. and Grewing, M. and van Leeuwen, F. and van der Marel, H. and Mignard, F. and Murray, C.A. and Le Poole, R.S. and Schrijver, H. and Turon, C. and Arenou, F. and Froeschlé, M. and Petersen, C.S.. The HIPPARCOS Catalogue. p. L49-L52 1997
- Lindegren, L. and Babusiaux, C. and Bailer-Jones, C. and Bastian, U. and Brown, A.G.A. and Cropper, M. and Hog, E. and Jordi, C. and Katz, D. and van Leeuwen, F. and Luri, X. and Mignard, F. and de Bruijne, J.H. J. and Prusti, T.. The Gaia mission: science, organization and present status. . p. 217-223 2008

3. Doppler Shift Determination

4. Conclusion

References

• Howell, Steve, *Handbook of CCD Astronomy*, 2nd Edition. Cambridge University Press, 2006.